

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. :

U.S. National Serial No. :

Filed :

PCT International Application No. : PCT/DE2005/000507

VERIFICATION OF A TRANSLATION

I, Charles Edward SITCH BA,

Acting Managing Director of RWS Group Ltd, of Europa House, Marsham Way, Gerrards Cross, Buckinghamshire, England declare:

That the translator responsible for the attached translation is knowledgeable in the German language in which the below identified international application was filed, and that, to the best of RWS Group Ltd knowledge and belief, the English translation of the amended sheets of the international application No. PCT/DE2005/000507 is a true and complete translation of the amended sheets of the above identified international application as filed.

I hereby declare that all the statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the patent application issued thereon.

Date: September 14, 2006

Signature :



For and on behalf of RWS Group Ltd

Post Office Address :

Europa House, Marsham Way,
Gerrards Cross, Buckinghamshire,
England.

- 11 -

Patent claims

1. A tool for closing and separating pluggable quick acting closure couplings for hydraulic lines (12), in particular of construction machines, with two engagement elements (18) which can be brought into engagement with in each case one coupling half (14, 16) of the quick acting closure coupling (10), and with an actuating mechanism (20), which can be handled manually, for the plugging-in movement of the coupling halves (14, 16) via a mutual relative movement of the engagement elements (18), the actuating mechanism (20) having a linear guide (28) which comprises two guide parts (32, 34) which are displaceable linearly in relation to each other, and the engagement elements (18) protruding transversely to the guide track (30) on one guide part in each case to form extension arms, and the actuating mechanism (20) having a pivot lever (40) and a deflecting mechanism (20) for transferring the movement of the pivot lever into the linear movement of the guide parts (32, 34), characterized in that the deflecting mechanism (20) comprises a double-jointed tension lever (44) which is coupled to the pivot lever (40) and to a guide part (32) and a drag lever (50) coupled to the pivot lever (40) at a distance from the tension lever (44), and in that the drag lever (50) is held via a supporting spring at a distance from the guide part (32) to be drawn up.

2. The tool as claimed in claim 1, characterized in that the coupling halves (14, 16) are movable linearly along a plug-in axis (64) running parallel to the guide track (30) at a lateral distance between the engagement elements (18).

3. The tool as claimed in claim 1 or 2, characterized in that the linear guide (28) has a handle tube (32)

and a rod (34), which is longitudinally displaceable therein, as guide parts (32, 34), and in that the handle tube (32) at the same time forms a hand lever for the manual actuation.

5

4. The tool as claimed in claim 3, characterized in that the handle tube (32) runs parallel to a plug-in axis and has a handle piece on a free end section.

10

5. The tool as claimed in one of claims 1 to 4, characterized in that the linear guide (28) is secured against rotation by a sliding block (36) guided in a groove (38) or by a polygonal cross section.

15

6. The tool as claimed in one of claims 1 to 5, characterized in that the engagement elements (18) can be fixed on the guide parts (32, 34) via releasable connecting means (54, 56).

20

7. The tool as claimed in claim 6, characterized in that the connecting means (54, 56) have an adjustment region running in the direction of the guide track (30), in particular a screw thread for setting the position of the engagement elements (18).

25

8. The tool as claimed in one of claims 1 to 7, characterized in that the engagement elements (18) can be brought into form-fitting connection with the coupling halves (14, 16).

30

9. The tool as claimed in one of claims 1 to 8, characterized in that the engagement elements (18) each have a fork-shaped piece (58) for engaging laterally around a coupling half (14, 16).

35

10. The tool as claimed in one of claims 1 to 9, characterized in that at least one engagement element

is designed as a hook (68) and can be fitted on a coupling half (14, 16) or on a mount (70) supporting the coupling halves (14, 16).

5 11. The tool as claimed in one of claims 1 to 10, characterized in that the pivot lever (40) is bent at its end (46) coupled to the linear guide (28), so that, during a pivoting actuation, the free lever end of the pivot lever (40) comes into a small angular position
10 with a guide part (32) which can be handled as the counter lever.

12. The tool as claimed in one of claims 1 to 11, characterized in that the pivot lever (40) is supported
15 pivotably on a guide part (34) via a coupling element (50), and in that the coupling element (50) can be adjusted longitudinally on the guide part (34) in the guide direction and can be fixed in a desired adjustment position, preferably in a self-holding
20 manner.

13. The tool as claimed in one of claims 1 to 12, characterized in that the drag lever (50) is mounted with play on the guide part (34), which is free from
25 the tension lever (44), via a clamping aperture (52), so that, if the drag lever (50) tilts, the guide part (34) comes into clamping connection in the clamping aperture (52).

30 14. A tool for closing and separating pluggable quick acting closure couplings for hydraulic lines (12), in particular of construction machines, with two engagement elements (18) which can be brought into engagement with in each case one coupling half (14, 16)
35 of the quick acting closure coupling (10), and with an actuating mechanism (20), which can preferably be handled manually, for the plugging-in movement of the

coupling halves (14, 16) via a mutual relative movement of the engagement elements (18), the actuating mechanism (20) having a linear guide (28) which comprises two guide parts (32, 34) which are
5 displaceable linearly in relation to each other, and the engagement elements (18) protruding transversely to the guide track (30) on one guide part in each case to form extension arms, and are formed by ring segment bodies (58) which can be placed onto the coupling
10 halves (14, 16) via an edge aperture (60) and are connected to the guide parts (32, 34) at a ring portion lying opposite the edge aperture (60), characterized in that the engagement elements (18) each have a conically widening central opening (62) for receiving a coupling
15 half (14, 16).

15. The tool as claimed in claim 14, characterized in that the central opening (62) of the ring segment bodies (58) is displaced eccentrically with respect to
20 the ring axis toward the edge aperture (60).

16. The tool as claimed in one of claims 1 to 15, characterized in that the engagement elements (18) can be closed in each case in the manner of pliers for
25 adaptation to different diameters of the coupling halves (14, 16).

17. The tool as claimed in one of claims 1 to 16, characterized in that the engagement elements (18) can
30 be coupled to adaptor pieces, in particular adaptor disks, for adaptation to different diameters of the coupling halves (14, 16).

18. The tool as claimed in claim 17, characterized in
35 that the adaptor pieces can be inserted into a receptacle of the engagement elements (18) or can be fitted on the coupling halves.

19. The tool as claimed in one of claims 14 to 18, characterized in that the central axes of the central openings (62) are aligned with one another.

5

20. The tool as claimed in one of claims 14 to 19, characterized in that the deflecting mechanism (20) has a rack (74), which is connected fixedly to one of the guide parts (32, 34), for fitting a fulcrum pin (66) of
10 the pivot lever (40) into.